



Should-Cost Management Tactics

Mark Husband ■ John Mueller

Since the 2010 release of the Better Buying Power (BBP) memo from Deputy Secretary of Defense Ashton Carter, Ph.D., (at the time the under secretary of Defense for acquisition, technology and logistics [USD(AT&L)]), the concept of should-cost management has been passionately discussed and debated by the acquisition workforce. Frequently asked questions include:

- What exactly is a should-cost estimate?
- Is a BBP should-cost review similar to the should-cost review in the Federal Acquisition Regulation (FAR)?
- How does my Service/agency implement should-cost policy?
- Is should-cost applicable to programs below the Acquisition Category (ACAT) I level?
- How (or why) does should-cost apply to programs outside the investment accounts?

But without a doubt, the No. 1 question asked about should-cost management has been, "What's going to happen to the funding delta between the should-cost and will-cost estimates?"

Husband is a DAU professor of cost analysis with 17 years of acquisition experience in cost estimating, systems engineering, and research and development project management. **Mueller** is a DAU professor of program management with 26 years of acquisition management experience in Air Force and joint programs.



The AIM-9X Sidewinder Air-to-Air Missile program was an early adopter of should-cost management.

Getting Into a Should-Cost Mindset

Experienced acquisition professionals are familiar with the various types and accuracy of program cost estimates. The should-cost concept asks the program manager (PM) to look at these estimates differently. Rather than accepting the estimates as foregone conclusions, the core principle of the BBP should-cost is to ask the PM to adopt a different mindset toward cost estimates. Under BBP, programs must continuously fight to lower costs wherever and whenever that makes sense. While lowering cost is a primary objective, a program should not trade away proven practices just to reduce near-term costs. A PM must retain a long-term view. The right mindset means looking for savings throughout a program's life cycle, not only in development and production, but also during the Operations and Support (O&S) phase. Finally, a should-cost mindset focuses the entire program office team on delivering the required capability—no more and no less—to the warfighter on time and within budget.

Additional Implementing Guidance

Following the original BBP memo, several additional policy memos clarifying the should-cost effort were released by the USD(AT&L), the under secretary of Defense-comptroller/chief financial officer, and each of the Services. These memos outlined implementation strategies, methods, and techniques for identifying should-cost savings. Articles on should-cost management have been written, briefings, presentations, and seminars conducted, and templates for addressing should-cost in Defense Acquisition Board (DAB) and Defense Acquisition Executive Summary (DAES) reviews have been released. But perhaps more important, a small number of programs have completed initial should-cost reviews in accordance with the original guidance and have briefed their should-cost estimate to the Milestone Decision Authority (MDA).

Implementing Should-Cost in Unexpected Places

One early adopter of should-cost was the AIM-9X Sidewinder Air-to-Air Missile program, led by Capt. John "Snooze" Martins

of PMA-259 at Naval Air Station Patuxent River, Md. Capt. Martins presented his team's accomplishments at the 2011 Program Executive Officers/Systems Command conference and has been a guest lecturer at the PMT 402 Executive Program Managers Course at DAU Fort Belvoir, Va.

Much of the attention on should-cost has focused on early phases of the acquisition life cycle where requirements trades, competitive pressures, and contract incentives can have major impacts on overall program costs. Applying this "upfront and early" criterion, the AIM-9X program would seem to be an unlikely candidate for should-cost success. The program is well into production with a stable design and a single production source. But as is the case with many complex DoD acquisitions, a "quick look" assessment fails to reveal the full picture. As the AIM-9X story reveals, should-cost management can be applied to any DoD activity, including Services and government costs; it's up to the PM to determine the types of should-cost initiatives that are appropriate for a given program.

The Back Story

The AIM-9X Sidewinder missile program recently transitioned from a single procurement into three distinct acquisition programs. The initial AIM-9X program, the Block I system, is more than 10 years old and needed component upgrades to address obsolescence issues. While these upgrades increased the missile's service life and effectiveness, the upgrades also increased the missile's unit cost. In mid-2010, the upgraded configuration became a separate program, the AIM-9X Block II. Later, based on the success of the AIM-9X Block II, a new start program called AIM-9X Block III was funded to begin in 2013 to further enhance missile range and provide upgraded computers. The AIM-9X Block II reached an on-time (and favorable) Milestone C decision on June 24, 2011. At this milestone review, USD(AT&L) directed the initiation of a should-cost effort on the Block II program before low-rate initial production (LRIP) lots 1 and 2 could be placed on contract.

Martins already was dealing with the typical challenges associated with managing multiple ACAT IC programs. Against this backdrop, performing a should-cost effort might seem to be "a bridge too far." Capt. Martins' takeaway from AT&L's direction:

Although some might not think a weapon system that has been fielded for 10 years could yield significant savings, all programs that are spending money can find efficiencies and identify savings, regardless of the life cycle stage or budget size. The intent of BBPi [initiative] is for all program managers to reduce costs across the DoD acquisition portfolio. For the AIM-9X program, the Block II procurement was just beginning to produce the new components and entering a steep part of the learning curve. The team identified that area as having the greatest opportunity for savings, so that's where the AIM-9X should-cost team focused.

The Tasking

As with most large DoD acquisitions, there were multiple reviews and decision meetings with OSD senior leaders prior to the AIM-9X Block II Milestone C decision. At one of these meetings, then Acting USD(AT&L) Frank Kendall designated the program an ACAT IC, with the Navy as the lead Service tasked to conduct the Milestone C Navy Program Decision Meeting on June 24, 2011. Mr. Kendall conducted an in-process review (IPR) the day prior to the Navy Milestone C on June 23, and, although he approved going to MS C, the IPR Acquisition Decision Memorandum (ADM) stated:

Prior to the Lot 11 LRIP (fiscal year 2011) contract award, the Navy will submit a detailed should-cost estimate for the program for my review. This estimate will be based on implementing a cost reduction strategy with the goal of driving aggressive incremental decreases in the Block II missile costs, particularly unit price. The estimate will include discrete bases for reduced missile costs, including component upgrades, manufacturing process streamlining, plant improvements, second-sourcing of components, test efficiencies, and sustainment initiatives. Each lower cost basis will be fully defined with corresponding estimates for specific cost impact.

With this ADM, Martins had the direction and motivation to begin his should-cost journey. Now he just needed a means of identifying and implementing should-cost savings.

AIM-9X Implementation

Within the construct of the BBP directives or initiatives, a favorable should-cost result depends upon the program office team's ability to find savings without reducing the system's capability to do its mission or increasing program risk to an unacceptable level. An obvious place to start looking for these savings is the location of your largest amount of "spend." For most DoD acquisition programs, the largest total amount of spending is in O&S of the fielded systems; however, the outlay of these dollars is largely outside the PM's direct control. To find near-term savings, the PM needs to look closest at spending within his span of control. As a result, most should-cost



While lowering cost is a primary objective, a program should not trade away proven practices just to reduce near-term costs.

efforts thus far have focused on programs in development or entering production.

A word of caution: Actions to obtain savings in the research, development, test and evaluation and procurement accounts can generate immediate positive impacts, but at the same time generate long-term costs that exceed the short-term savings. These changes also could negatively impact the system's overall effectiveness. Frequently cited examples of shortsighted cuts include reducing training, cutting spare parts orders, or deferring data rights purchases.

For the AIM-9X program, the program office developed a four-step methodology to produce its should-cost estimate.

The first step was to break down program funding and cost drivers to identify the areas with high savings potential. In other words, follow the money. Unlike most weapon programs, the majority of life cycle funding for a munitions program is usually procurement as operation and maintenance funds are comparatively small. As a result, the AIM-9X team focused its initial should-cost effort on reducing the weapon's unit cost.

The next step was identifying and prioritizing cost savings opportunities. The team's processes included a brainstorming effort with multifunctional participants to identify all possible sources of future savings. The savings ideas were organized into a fishbone diagram to group them by category, based on guidance that "there is no such thing as a bad idea" during the brainstorming stage. The broad group of participants included both government and contractor personnel. More than 100 possible cost-reduction initiatives were identified and prioritized based on their probability of success and possible payoff.

Using this analysis, the third step was to create a plan of action and milestones (POA&M) to pursue selected cost reduction initiatives based upon timelines that made the most sense. This is where the really hard work began. Specific actions were designed and implemented to achieve the desired savings in the future buys of the AIM-9X missile. Table 1 lists the

team's initiatives ranked by their ability to produce savings to the program.

Table 1. Cost Savings Initiatives

Title
Increment 1
Accelerate Production Deliveries (Lot 11)
Lot 11 Contract: FPIF (AOTD)
Increment 2
Accelerate Production Deliveries (Lot 12)
Lot 12 Contract December Option / FPIF (AOTD)
Reduce SEPM/Overhead
Automated AUR Test at FACO
AOTD Data Link Test Equipment Upgrade
AOTD Vibe Station Upgrade
AOTD Inner Housing Assembly Test Equipment
Increment 3
Lot 13 Contract Type: FPIF (entire missile)
Consolidate Shared Support Functions Across Contracts
Match Production Spec Requirements to Capabilities
Improve nLight AOTD Laser Factory Reclaim/Rework
Improve nLight AOTD Laser Solder Fixtures
Automate nLight AOTD Laser Test Station
Improve ELCAN AOTD Transceiver Yield
Cryoengine Seal Improvement
Increment 4
FY14 Multi-Year Contract
Package HW ECPs in 2 year centers
Synchronize Contract Award Timelines
Contract to Price, Not by Element
Synchronize Parts Quality Requirements Across USG Customers
Streamline Contractor Response to Quality Escapes
Reduce AOTD Performance Requirements
Bundle vendors: datalink, rocket motor
Increment 5
Supply Chain Management for Competition
Affordable CATM 1: Optimize CATM BIT
Affordable CATM 2: Hardware Optimization

Finally, the projected savings each year were used to create should-cost targets for the next 5 years of procurement. These targets became the government's price position for contract negotiations. Figure 1 represents some of the key results from the should-cost effort.

Following the completion of the should-cost work, Kendall was briefed 45 days after the original Acquisition Defense Memorandum. The results of the should-cost effort were decreased unit costs for the next two buys of missiles with potential future savings based on the learning curve for the program. With this data in hand, Kendall approved the government's position on the LRIP 1 contract prices for Lot 11 of AIM-9X Block II missiles.

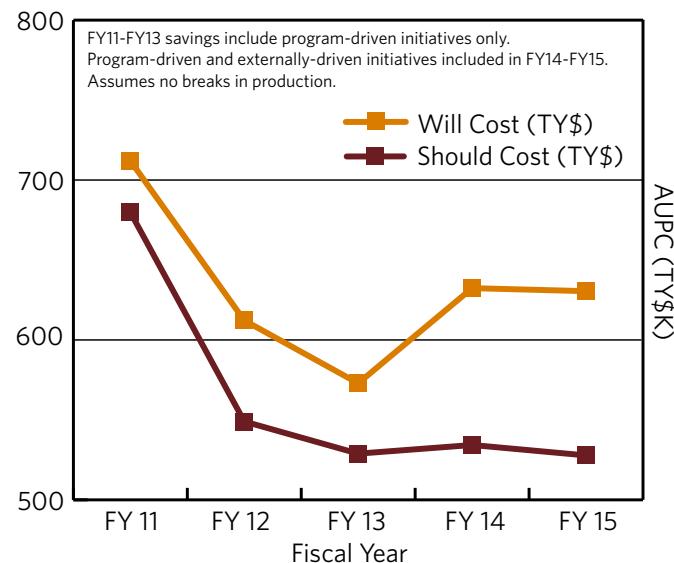
Answering the Big Question

Creating a should-cost estimate is a significant effort for the PM, but executing it to realize the savings is even more important—and perhaps more difficult. It's important to understand that the window for savings is transient—all the effort that goes into creating a new, lower-cost target is lost if the savings can't be realized. So back to Martins: Have you been able to lock in these savings and what is the likely potential use for these funds?

The program has had two successful negotiations and has contracted for two lots of missiles awards since the start of the should-cost effort. The initial contractor proposed unit prices associated with both lots exceeded the should-cost targets. After concluding negotiations, the final Lot 11 \$664K unit price was 43 percent less than the projected unit price a year earlier. The subsequent Lot 12 unit price was further reduced to \$488K. The \$21M Lot 11 savings allowed the DoD to purchase 28 additional units, invest in additional CRIs [cost reduction initiatives], and pay pop-up obsolescence bills. Similarly, Lot 12 savings allowed the Navy to purchase 25 additional units, invest in additional CRIs, and enabled the program to effectively deal with the inevitable unexpected bills during the execution year.

The net result for the AIM-9X program was that the results from the team's should-cost work stayed within the program

Figure 1. AIM-9X "Will Cost" Vs. "Should Cost" Then-Year Dollars, Program Quantities



and provided additional benefit to the warfighter in both quantity and quality of the product. This result is consistent with the intent of the AT&L Better Buying Power initiatives.

Final Thoughts

What final words does Martins have for other acquisition programs as they chart their own should-cost path?

In addition to using should-cost evaluations to become a better buyer, AT&L leadership is especially focused on cost reduction initiatives based on competition. Top-level competition for the AIM-9X product line was not feasible with Raytheon as a sole source prime. However, alternative potential sources of competition can be found lower in the supply chain. An attractive possibility is taking an expensive component, competing it, and providing it to the prime as GFE [government-furnished equipment]. This requires government data rights, so you should anticipate that many should-cost discussions with leadership will involve data rights.

As an additional note, PMs must of course be very cautious about how they describe potential should-cost program savings. It is not OSD's intent to cut program budgets based on potential cost savings, but instead to reallocate or return to Treasury those savings only after they are realized. When briefing audiences both internal and external to DoD, it is critical that PMs provide sufficient detail about the savings initiatives, including their timelines as well as assumptions and associated risks.

Thanks to Capt. Martins for sharing his experiences from the AIM-9X should-cost effort. &

The authors can be reached at mark.husband@dau.mil and john.mueller@dau.mil.

Additional Should-Cost Management Policy and Guidance

The guidance on Should-Cost Management in the original BBP memo was deliberately broad in recognition that, to be successful, the concept would need to be further developed and embraced by the Services and key leaders in the acquisition community. OSD(AT&L) led a joint implementation team that included members of each Service to further refine and develop should-cost management principles. Those principles have been codified and promulgated to the acquisition workforce in the following guidance documents:

- USD(AT&L): "Implementation Directive for Better Buying Power—Obtaining Greater Efficiency and Productivity in Defense Spending," Nov 3, 2010
- USD(AT&L) and USD(C): "Joint Memorandum on Savings Related to Should-cost," Apr 22, 2011
- USD(AT&L): "Implementation of Will-Cost and Should-Cost Management," Apr 22, 2011
- USD(AT&L): "Should-Cost and Affordability," Aug 24, 2011
- Army: SAAL-ZR: "Army Implementation of USD(AT&L) Affordability Initiatives," Jun 10, 2011
- Air Force: SAF/FM & SAF/AQ: "Implementation of Will-Cost and Should-Cost Management," Jun 15, 2011
- Navy: ASD(RDA): "Implementation of Should-Cost Management," Jul 19, 2011

Farewell, John—Welcome, Ben



John Bell

This issue of *Defense AT&L* magazine marks a change in the managing editorship. John Bell, whose editing skills have shaped the magazine since early 2011, has left for another position with the Defense Department. Benjamin Tyree, formerly a senior editor at Defense Acquisition University and editor of the DAU Course Catalog, is the new managing editor. Ben has had a substantial career in journalism, as a newspaper and newsletter editor and magazine writer. We wish John well in his new endeavors and welcome Ben on board as the new helmsman. Ben's e-mail address is Benjamin.Tyree@dau.mil.



Ben Tyree